

ADAPTIVE SCHEDULING OF DATA DELIVERY IN A CENTRAL SERVER**Abstract**

In accordance with one embodiment of the invention, a central server system computes a feasible stretch value for use in scheduling the servicing of job requests by a plurality of communication channels. A stretch value provides an indication of the delay experienced by each job request to complete, when the central server processes many jobs concurrently. A processing time is calculated for each job request based on the size of the job request and the bandwidth of the channel. Thereafter, a stretch value is proposed. The server system computes a deadline for each job to be the arrival time of the job request plus the product of the processing time and the proposed stretch value. Thereafter, each job request is scheduled, based on an “earliest deadline first” arrangement. According to the EDF methodology, the central server schedules for service, via k local channel servers, the job requests, such that the k job requests which have the earliest deadlines are serviced first by the k local channel servers and the remaining job requests are subsequently serviced as the local channel servers become available. The proposed stretch value is deemed feasible if each pending job request can be completed prior to its deadline. If the proposed stretch value is deemed not feasible, it is adjusted iteratively until a feasible stretch value is found. The feasible stretch value is then utilized to schedule the job requests to be serviced by the channels.